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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,835	08/24/2006	Masanori Ogawa	2710/76787	1492

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EXAMINER	
CHOI, PETER Y	
ART UNIT	PAPER NUMBER
1794	
MAIL DATE	DELIVERY MODE
07/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,835	OGAWA ET AL.	
	Examiner	Art Unit	
	Peter Y. Choi	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5 and 16-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5 and 16-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 28, 2008, has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2, 5, and 16-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 2, 5, and 16-24, claims 1 and 24 recite that the fiber sheet "consists of or contains a fiber having a low melting point." Based on the verbiage of the claim, it is unclear whether the transitional phrases "consists of or contains" are intended to exclude any element or ingredient not specified in the claim or whether they are intended to be open-ended and not exclude additional, unrecited elements. *See* MPEP 2111.03.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 16-19, and 21-24 are rejected under 35 U.S.C. 103(a) as obvious over WO 02/038374 to Ogawa (the translation presented as US Pub. No. 2004/0100125 to Ogawa) in view of USPN 6,362,269 to Ishihata, with USPN 6,384,128 to Wadahara cited to show a state of fact.

Regarding claims 1, 2, 16-19, and 21-23, Ogawa teaches a fire resistant fiber sheet consisting of a fiber sheet in which fire retardant capsules consisting of a fire retardant powder are added, wherein the fiber sheet consists of or contains a fiber having a low melting point of below 180°C and the fiber sheet is bound with a sulfomethylated and/or sulfimethylated phenolic resin which is added to the fiber sheet in an amount of between 5 and 200% by mass relative to the mass of the fiber sheet without the capsules (see entire document including paragraphs 0001-0003, 0013-0019, 0024-0031, 0052, Examples 1 and 2, Claims 1-7). It should be noted that Applicants' specification at page 6 teaches that fibers such as polyethylene fiber, polyester fiber, polyamide fiber, and polyvinyl chloride fiber have a melting point of below 180°C.

Regarding claims 1, 2, 16-19, and 21-23, Ogawa does not appear to teach that the fire retardant capsules consist of a water soluble fire retardant powder covered with a water insoluble synthetic resin shell. However, Ogawa teaches the inclusion of a powder such as a fire retardant or an antiflame agent to the sulfomethylated or sulfimethylated phenolic resin (Ogawa, paragraph 0031). Ishihata teaches a resin composition suitable for use in molded articles

comprising an aromatic resin, fibers and phosphorus or microencapsulated phosphorus particles, wherein the phosphorus is encapsulated by a thermosetting resin (Ishihata, column 1 lines 5-9, column 3 lines 1-35, column 15 line 34 to column 17 line 36, column 23 line 12 to column 26 line 19). It should be noted that the thermosetting resin of Ishihata is a melamine resin which is substantially similar to the synthetic resin shell taught in Applicants' specification. Additionally, Wadahara teaches that red phosphorus is inherently water soluble (Wadahara, column 16 lines 12-61). It would have been obvious to one of ordinary skill in the molded articles art at the time the invention was made to form the fiber sheet of Ogawa, wherein the fire retardant comprises microencapsulated phosphorus particles, as taught by Ishihata, motivated by the desire of forming a conventional fiber sheet with a fire retardant known in the art to be suitable for use in molded articles and since the encapsulated phosphorus particles are known in the art to be preferable due to their higher safety and workability and since the encapsulated phosphorus particles are commercially available.

Regarding claims 1, 2, 16-19, and 21-23, Ogawa does not appear to teach that the fire retardant capsules are added to the fiber sheet in an amount of between 5 and 200% and between 5% and 80% by mass relative to the mass of the fiber sheet without the capsules. Since Ogawa is silent with regards to the specific amount of fire retardant capsules, it would have been necessary and thus obvious to look to the prior art for conventional add-on amounts. Ishihata provides this conventional teaching showing that it is known in the art to add flame retardant microencapsulated phosphorus particles to resin suitable for use in molded articles wherein the amount of particles added to the resin is between 0.1 to 25 parts by weight (Ishihata, column 26 lines 8-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to form the fiber sheet of Ogawa, with the percentage of microencapsulated phosphorus particles, as taught by Ishihata, motivated by the desire of forming a conventional molded article having microencapsulated phosphorus particles with a percentage of particles known in the art to be suitable for use in molded articles.

Regarding claims 16, 17 and 23, Ogawa in view of Ishihata teaches a molded article wherein the fire resistant fiber sheet is molded into a prescribed shape (Ogawa, paragraph 0040).

Regarding claim 17, Ogawa in view of Ishihata does not appear to teach that the ventilation resistance of the molded article is in the range of between 0.1 and 100kPa · s/m. Although the prior art does not disclose claimed ventilation resistance, the claimed property is deemed to be inherent to the structure in the prior art combination since the prior art combination teaches an invention with a substantially similar structure and chemical composition (a molded fiber resistant fiber sheet comprising the claimed fire retardant capsule and sulfimethylated and/or sulfomethylated phenolic resin) as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicants to prove otherwise. Additionally, it should be noted that the claimed ventilation resistance is a result effective variable. As the thickness and the amount of the film increases, the air permeability or air flow resistance decreases while the structure becomes more rigid and secure. Absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the ventilation resistance, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In the present invention one would have been motivated to optimize the ventilation resistance in order to form a conventional molded

article with the desired gas permeability, soundproofing and impact absorption properties taught by Ogawa (paragraphs 0035-0040, 0052).

Regarding claim 18, Ogawa in view of Ishihata teaches a laminated material wherein other porous sheet(s) is (are) laminated onto one or both sides of the fire resistant fiber sheet (Ogawa paragraphs 0035-0040).

Regarding claims 19, 21 and 22, Ogawa in view of Ishihata teacjes that the porous sheet(s) is (are) laminated onto one or both sides of the fire resistant fiber sheet through thermoplastic resin film(s) that has (have) a thickness of between 10 and 200 μm (Ogawa, paragraph 0003).

Regarding claims 21 and 22, Ogawa in view of Ishihata teaches a laminated material is molded into a prescribed shape (Ogawa, paragraph 0040).

Regarding claim 22, Ogawa in view of Ishihata does not appear to teach that the ventilation resistance of the molded article is in the range of between 0.1 and 100kPa · s/m. Although the prior art does not disclose claimed ventilation resistance, the claimed property is deemed to be inherent to the structure in the prior art combination since the prior art combination teaches an invention with a substantially similar structure and chemical composition (a molded fiber resistant fiber sheet comprising the claimed fire retardant capsule and sulfimethylated and/or sulfomethylated phenolic resin) as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicants to prove otherwise. Additionally, it should be noted that the claimed ventilation resistance is a result effective variable. As the thickness and the amount of the film increases, the air permeability or air flow resistance decreases while the structure becomes more rigid and secure.

Absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the ventilation resistance, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In the present invention one would have been motivated to optimize the ventilation resistance in order to form a conventional molded article with the desired gas permeability, soundproofing and impact absorption properties taught by Ogawa (paragraphs 0035-0040, 0052).

Regarding claim 23, Ogawa in view of Ishihata teaches a fire resistant acoustic material for cars made of a molded article (Ogawa, paragraph 0040).

Regarding claim 24, Ogawa teaches a fire resistant fiber sheet comprising a fiber sheet in which fire retardant capsules consisting of a fire retardant powder are added, wherein the fiber sheet consists of or contains a fiber having a low melting point of below 180°C and the fiber sheet is bound with sulfomethylated and/or sulfimethylated phenolic resin which is added to the fiber sheet in an amount of between 5 and 200% by mass relative to the mass of the fibers sheet without the capsules (see entire document including paragraphs 0001-0003, 0013-0019, 0024-0031, 0052, Examples 1 and 2, Claims 1-7). It should be noted that Applicants' specification at page 6 teaches that fibers such as polyethylene fiber, polyester fiber, polyamide fiber, and polyvinyl chloride fiber have a melting point of below 180°C.

Regarding claim 24, Ogawa does not appear to teach that the fire retardant capsules consist of a water soluble fire retardant powder covered with a water insoluble synthetic resin shell. However, Ogawa teaches the inclusion of a powder such as a fire retardant or an antiflame agent to the sulfomethylated or sulfimethylated phenolic resin (Ogawa, paragraph 0031).

Ishihata teaches a resin composition suitable for use in molded articles comprising an aromatic resin, fibers and phosphorus or microencapsulated phosphorus particles, wherein the phosphorus is encapsulated by a thermosetting resin (Ishihata, column 1 lines 5-9, column 3 lines 1-35, column 15 line 34 to column 17 line 36, column 23 line 12 to column 26 line 19). It should be noted that the thermosetting resin of Ishihata is a melamine resin which is substantially similar to the synthetic resin shell taught in Applicants' specification. Additionally, Wadahara teaches that red phosphorus is inherently water soluble (Wadahara, column 16 lines 12-61). It would have been obvious to one of ordinary skill in the molded articles art at the time the invention was made to form the fiber sheet of Ogawa, wherein the fire retardant comprises microencapsulated phosphorus particles, as taught by Ishihata, motivated by the desire of forming a conventional fiber sheet with a fire retardant known in the art to be suitable for use in molded articles and since the encapsulated phosphorus particles are known in the art to be preferable due to their higher safety and workability and since the encapsulated phosphorus particles are commercially available.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Ishihata, as applied to claims 1, 2, 16-19, and 21-24 above, and further in view of USPN 5,188,896 to Suh.

Regarding claim 5, Ogawa in view of Ishihata does not appear to teach that the fibers are hollowed or a mixture of solid and hollowed fibers. However, Suh teaches a thermal insulation comprising hollow thermoplastic fibers and polymeric fibers wherein the fibers are coated with a synthetic resin and a flame retardant (Suh, column 1 lines 13-49, column 4 line 13 to column 5

line 48, Example 3). It would have been obvious to one of ordinary skill in the fire retardant fiber art to form the fire retardant fiber sheet of Ogawa in view of Ishihata, wherein the fibers comprise hollow thermoplastic fibers and polymeric fibers, as taught by Suh, motivated by the desire of forming a conventional fire retardant fiber sheet with fire resistant properties which is lightweight and provides good fire resistance, and such a combination was known and the resulting product predictable at the time the invention was made.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Ishihata, as applied to claims 1, 2, 16-19, and 21-24 above, and further in view of US Pub. No. 2005/0263345 to Erickson.

Regarding claim 20, Ogawa in view of Ishihata does not appear to teach that a hot melt adhesive powder is scattered onto one or both sides of the fire resistant fiber sheet in an amount of between 1 and 100 g/m^2 and the other porous material sheet(s) is (are) laminated onto the fiber sheet through the scattered layer of hot melt adhesive powder. However, Erickson teaches that it was known to form a sound absorbent material or trim panel and headliner, comprising multiple layers of fibrous material and adhesive powder, wherein the acoustic flow resistance is in the range of about 500 to 2500 Rayls and the adhesive powder is applied as a coating at a weight of about 10 g/m^2 (Erickson, paragraphs 0002, 0003, 0008-0015, 0034-0037, 0042, 0043). It would have been obvious to one of ordinary skill in the vehicle panel art to form the molded vehicle article of Ogawa in view of Ishihata, having the ventilation resistance and amount of adhesive powder adhering the porous sheet to the fiber sheet, as taught by Erickson, motivated by the desire of forming a conventional vehicle panel with desirable sound absorption properties which maintains porosity and provides acoustic absorption by minimizing reflection of sound waves.

Response to Arguments

8. Applicants' arguments filed May 28, 2008, have been fully considered but they are not persuasive. Applicants state that in the invention defined by claims 1 and 24, when the fire resistant fiber sheet is hot molded into a prescribed shape, the fiber having a low melting point may melt and twist around the fire retardant powder so that the fire retardant powder is firmly fixed in the fiber sheet to obtain an excellent stability of the fire resistance of the resulting molded fiber sheet. It should be noted that the above-mentioned recitation appears to be merely descriptive of an end-use application for the invention after subsequent treatment. For example, claims 1 and 24 do not recite that the fiber sheet is hot molded into a shape, and a reasonable interpretation of claims 1 and 24 would not lead one of ordinary skill in the art to necessarily presume that the low melting point fiber may melt and twist around the fire retardant powder.

Applicants argue that the characteristic defined in amended claims 1 and 24 is to fix firmly fire retardant capsules to the fiber sheet by using fiber having a low melting point and this characteristic is not disclosed in any of the references. Additionally, Applicants argue that Ogawa does not disclose that a fiber having a low melting point below 180°C and fire retardant capsules are added in the fiber sheet, so that the above described effect of the invention defined is claims 1 and 24 is unexpectable even for an expert. Additionally, Applicants argue that Ishihata, Suh and Erickson do not disclose the fiber sheet consisting of or containing a fiber having a low melting point.

Regarding Applicants' arguments, Examiner respectfully disagrees. In response to Applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

Ogawa is not relied on to teach fire retardant capsules. However, Ogawa teaches the inclusion of a powder such as a fire retardant or an antiflame agent to the sulfomethylated or sulfimethylated phenolic resin. Ishihata teaches a resin composition suitable for use in molded articles comprising an aromatic resin, fibers and phosphorus or microencapsulated phosphorus particles, wherein the phosphorus is encapsulated by a thermosetting resin. Therefore, it would have been obvious to one of ordinary skill in the molded articles art at the time the invention was made to form the fiber sheet of Ogawa, wherein the fire retardant comprises microencapsulated phosphorus particles, as taught by Ishihata, motivated by the desire of forming a conventional fiber sheet with a fire retardant known in the art to be suitable for use in molded articles and since the encapsulated phosphorus particles are known in the art to be preferable due to their higher safety and workability and since the encapsulated phosphorus particles are commercially available.

Applicants argue that the references do not teach a fiber sheet consisting of or containing a fiber having a low melting point. Examiner respectfully disagrees. Ogawa teaches a variety of fibers comprising the fiber sheet including polyethylene fiber, polyester fiber, polyamide fiber, and polyvinyl chloride fiber (Ogawa, paragraph 0013). As noted above, Applicants' specification at page 6 teaches that fibers such as polyethylene fiber, polyester fiber, polyamide fiber, and polyvinyl chloride fiber have a melting point of below 180°C. Therefore, Ogawa appears to teach the claimed limitation. Additionally, as recited above, Applicants' arguments setting forth that the characteristic defined in amended claims 1 and 24 is to fix firmly fire retardant capsules to the fiber sheet by using fiber having a low melting point, appears to be merely descriptive of an end-use application for the invention after subsequent treatment. For

example, claims 1 and 24 do not recite that the fiber sheet is hot molded into a shape, and a reasonable interpretation of claims 1 and 24 would not lead one of ordinary skill in the art to necessarily presume that the low melting point fiber fixes the fire retardant capsules to the fiber sheet. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Since Applicants appear to be arguing further structural and compositional requirements, formed by subsequent treatment to the claimed invention, which are not set forth in the claims, Applicants' arguments are outside the scope of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Y. Choi whose telephone number is (571)272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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